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ABSTRACT

This paper views the enhancement of students' self-concepts as a high priority for school psychologists. It focuses on the theory, research and implications for practice regarding academic self-concept. Four models of the structure of self-concept and their resulting implications for practice are reviewed: (1) nomothetic; (2) taxonomic; (3) compensatory; and (4) hierarchical. Marsh's (1987) Big-Fish-Little-Pond effect on academic self-concept is discussed, with implications for the possible impact on academic self-concept of placement into remedial or accelerated programs, movement between varying types of school systems, or the possibility that parents who place their children into highly competitive educational programs may actually achieve exactly the reverse of their intended goals. The document concludes with a brief overview of recent research on academic self-concept underway at the University of Maryland, stressing the implications for practice resulting therefrom. (Author/NB)

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Big-Fish-Little-Pond, and Other Aspects of Students' Academic Self-Concepts

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Big-Fish-Little-Pond, and Other Aspects of Students' Academic Self-Concepts

Enhancing students' self-concepts is a high priority for practicing school psychologists. This paper focuses on the theory, research and implications for practice regarding academic self-concept (ASC). Four models of the structure of self-concept, and their resulting implications for practice will be reviewed. Marsh's (1987) fascinating Big-Fish-Little-Pond effect on ASC is discussed, with implications for the possible impact on ASC of placement into remedial or accelerated programs, movement between varying types of school systems, or the possibility that parents who place thier children into highly competitive educational programs may actually achieve exactly the reverse of their intended goals. The presentation will conclude with a brief overview of recent research on ASC underway at the University of Maryland, stressing the implications for practice resulting therefrom.

Enhancing students' self-concepts is a high priority for practicing school psychologists. However, the pressing need to examine the clinical details of the case-at-hand often precludes analysis of the general factors that impact how students view themselves. Consideration of theory and research regarding self-concept development can be useful in both case-centered and systems-level consultation, as well as in clinical applications to a particular case. This paper focuses on the theory, research and implications for practice regarding academic self-concept (ASC), a critical aspect of a person's overall view of self. An enhanced understanding of recent work in this area may be informative to the practicing school psychologist in direct-service work, such as counseling, but is probably most useful in case-centered consultation with teachers and parents, and in systems-level consultation aimed at improving the outcomes of educational programs.

Before continuing, it is useful to consider what is meant by the term "self-concept", especially as it is used by the current leading researchers in the field. Historically, the field has been muddied by a profusion of "self" terms. For example, in their review of128 published studies Hansford and Hattie (1982) found 15 different self terms, including the two most commonly used terms (self-concept, self-esteem) and a variety of less frequently used ones (e.g., self-acceptance, self-confidence, self-regard). To make matters worse, it is unclear that the <u>same</u> term is synonymously used by different authors. Although most of the work reviewed in this paper does not explicitly include a definition of self-concept, it would

seem that most would agree with Marsh and Shavelson's (1985) definition that stresses self-perceptions that include both descriptive and evaluative dimensions. However, the current accent seems to be more cognitively (e.g., "I can write effectively") than affectively (e.g., "I feel that I am a person of worth") oriented. This is particularly true of ASC. As such, the discussion of self-concept that follows may not completely apply to components of the "self-system" that might be more accurately labeled "self-esteem", "self-acceptance", or "self-worth".

Interest in self-concept, both as a research topic and as a focus of intervention, waned during the last decade because: (a) self-concept has been persistently difficult to define (Shavelson, Hubner, & Stanton, 1976), (b) research has shown few consistent relationships between global self-concept or self-esteem measures and other variables, such as academic outcomes (Hansford & Hattie, 1982), and (c) because short-term interventions seldom produce measureable changes in self-concept (Strein, 1988b). More recently, however, ground-breaking research on self-concept generally, and ASC in particular, has made this topic one of the "hottest" areas in the educational psychology literature, both in the U.S. (e.g., Byrne & Shavelson, 1986) and abroad (e.g., Fend & Schroer, 1985).

Four competing models of the structure of self-concept (nomothetic, taxonomic, compensatory, hierarichal) currently exist (Byrne, 1984). Each model will be reviewed, along with its supportive evidence and the implications for practice that follow from it. Byrne has labeled the oldest and most traditional view of self-concept as the nomothetic model. In this model, self-concept (or alternatively, "self-esteem") is viewed as a unidimensional, overarching construct in which a global positive or negative view of self pervasively affects one's behavior in a wide variety, if not all, situations. Although it is difficult to attach theorists' names to this view, it is operationalized on instruments such as the Rosenberg Self-Esteem Scale that yield one global rating of self-concept. That this view is still widely held is exemplified by the fact that over 100 research articles published between 1983 and 1988 used the Rosenberg scale as the primary data source.[1]

The nomothetic model finds some support in the literature (e.g. Marx & Winne, 1978). Similar to the debate over the structure of intelligence, proponents of this model argue that a general factor predominates to such a degree that subcategories cannot be reliably identified. However, the preponderance of recent research supports a multifaceted view (Byrne, 1984). Accordingly, most of the more commonly used instruments, such as the Piers-Harris Children's Self-Concept Scale (1969, 1977), the Coopersmith Self-Esteem Inventory (Coopersmith, 1981) and the Tennesee Self-Concept Scale (Fitts, 1984), treat

self-concept as a multi-dimensional construct by including clusters or subscales such as "social self", "physical appearance", "family self", or "school-academic", in addition to a "general self" score.

Although largely rejected by the leading theorists and reserchers, belief in self-concept as a global trait most likely endures because of its conceptual simplicity , and because this view offers promising results from nonspecific, counseling-type interventions. For if self-concept is a global trait that has wide influence on behavior, it follows that therapeutically induced changes in self-concept will alter a variety of situation-specific behaviors without having to intervene in each specific situation. Further, most adherents to this view additionally assume that behavior in one area can be affected by changes in another area as a result of changes in the global trait. So, for example, success on the gridiron might strengthen a positive self-concept which would, in turn, increase performance in the classroom, again without direct work on academic success. In summary, viewing self-concept as a global, unidimensional trait leads to a stress on more global and person-centered interventions rather than stressing those that are more situationally-specific.

In sharp contrast to the nomothetic model, the taxonomic model depicts self-concept as a multifaceted construct in which the various facets are only weakly related, if at all (Soares & Soares, 1983). This model "... allows for self-perceptions, developing independently according to experiences, capabilities, treatment from others, relationships with significant others..." (p. 9). Indpendence of the facets of self-perception is the hallmark of this model. Soares and Soares (1982, 1983) report on a series of studies, using a semantic differential instrument developed by these authors, that suggested a clustering of self-perceptions regarding a "school self" and language arts, self-perceptions in mathematics and science that were divergent from each other and from other self-perceptions, and inconsistently defined perceptions in self-perceptions around the arts and physical education. Several other researchers have at least tacitly embraced something like the taxonomic model (see Byrne, 1984). The main evidence against this model is support for the view that the various facets are inter-related rather than independent (see discussion of the hierarichal model below). This debate is less a clash between mutually exclusive positions than it is a continuum between weak and strong inter-relationships. As such, it is quite similar to the debate over the nature of intelligence, that is, to what degree is there a general factor or second-order factors that unify a variety of abilities?

Implications for practice flowing from the taxonomic model are the mirror image of those stemming from the

nomothetic view. If self-concept is not primarily a global trait and if the various facets of self-perception are only weakly related, it follows that more focused, domain-specific interventions would have a greater potential than would more global ones. Accordingly, counseling-type work might, for example, focus specifically on cognitions about mathematics ability or social self. Although not disucssed directly by the theorists, the taxonomic model would seem to give greater support to the idea that self-perceptions are learned in a situation-specific manner, such that the greatest effects will result from in situ interventions. Hence, increasing success in the mathematics classroom or increasing positive social interactions would go farther to build more positive self-perceptions than would more traditional self-concept enhancement programs.

Of the four models reviewed here, the compensatory model is clearly unique. For while in agreeing with the taxonomic and hierarchical models that self-concept is multifaceted, the compensatory model allows for compensatory relationships between the facets (Winne, Woodlands & Wong, 1982). A lowered self-concept in one area, say ASC, is compensated for by an enhanced view of self in some unrelated area, say body image. Because research supporting this view has largely involved atypical groups, e.g., learning disabled or gifted, results may not be generalizeable to the general population. Studies supporting the compensatory notion typically report that although intergrpup comparisons do show differential ASCs for academically differing groups, nonASCs either do not differ or actually favor the academically disadvantaged group. For example, the Winne et. al (1982) study found that although learning disabled children showed a consistent pattern of lower ASCs compared to either a normal or gifted group, these children showed lower scores on only one of ten nonASC scales compared to normals, and actually showed a more positive self-concept on one are (social virtues) compared to the gifted. However, within the subgroups intercorrelations between facets were also positive; i.e. no inverse relationships were observed.

Implications for professional practice flowing from this model are not immediately clear. One might be inclined to de-emphasize concerns regarding possible depressing effects on ASC of placement into remedial programs, if an assumed compensatory mechanism tends to balance the self-system. However, three critical issues within this model are unclear: (a) what are the effects within any domain of a lower self-concept, e.g., does a lower ASC tend to lead to lower academic performance even if compensated for in some nonacademic area, (b) are the "compensatory" interrealtionships actually "defensive" in nature, i.e. distortations of reality used as a "face-saving" maneuver resulting in an inflated self-image in some area, or (c) conversely, does the compensation

reflect an underlying process of honest self-assessment whereby people search for their stronger suits? Unless more compelling supportive and clarifying evidence emerges, the compensatory model would seem to be a poor conceptual guide for professional practice.

The hierarchical model combines elements of the nomothetic and taxonomic models but stresses a nesting of the specific self-perceptions under somewhat broader second-order factors. Based primarily on the seminal work of Shavelson and his colleagues (Shavelson, et. al., 1976; Shavelson & Bolus, 1982), the heirarchical model can be described as a pyramid with a general self-concept at the apex, several intermediate-level self-concepts at the second level and, nested under these, specific self-concepts as in the taxonomic model. Although the specific units of the model vary, all of the proposed hierarchical models share this basic form. One recent model (Marsh & Shavelson, 1985) includes a general self-concept, a nonASC which subsumes self-concepts of physical ability, physical appearance, and peer relationships, an academic English self-concept that includes reading self-concept, and an academic mathematics self-concept. A "general school" self-concept is subsumed by both of the ASCs, and perception of parental relationships is subsumed by all of the second-level self-concepts.

Research support is clearly stronger for the hierarchical model than for the other three (Byrne, 1984; Byrne & Shavelson, 1986; Marsh, Parker & Smith, 1983; Marsh & Shavelson, 1985). The model has been tested rigorously and has held up cross-culturally. Exact relationships between various parts of the model are still open to question. For example, Shavelson, et. al. (1976) found support for a model that included an overall ASC divided into four subclasses: English, history, math and science. By contrast, Byrne and Shavelson (1986) directly compared several alternative structural models and found the strongest support for the Marsh and Shavelson (1985) model described above that views academic English self-concept and academic mathematics self-concepts as separate factors. Byrne and Shavelson (1986) also found evidence to suggest that the hierarchical structure weakens with increasing age. Importantly, rigorous research (Marsh, Parker, & Smith,1983; Byrne & Shavelson, 1986) has demonstrated that the various aspects of ASC are separable from grades in those respective areas. In other words, ASC is not merely students' reports of their progress. A critical and consistent finding within the hierarichical model is that academic grades in specific subject areas are more highly related to self-concept in their respective areas, e.g., math grades vs. math self-concept, than they are to more global self-concept measures. Additionally, general self-concept relates only weakly, if at all, to academic achievement as measured by tests or

grades (Byrne, 1984; Marsh, Parker, & Smith, 1983; Byrne & Shavelson, 1986).

The hierarchical model supports implications for practice similar to those implied by the taxonomic model. However, the positive inter-relationships among the model's facets - although generally weaker than the more direct relationships between specific self-concepts and their respective areas of behavior - imply that some changes may generalize throughout the system. So, for example, it is theoretically possible within the hierarchical model that some induced changes in general self-concept would have effects on academic achievement or interpersonal behavior, or the converse, that is, that behavioral changes in one area would affect self-perceptions in another area. However, before we raise the claim that this model supports the use of insight-oriented counseling or extra-curricular activities as promising ways of raising the performance of underachievers, we must recognize that the model clearly implies that domain-specific interventions are more likely to be successful than are more global ones.

There is abundant evidence that ASC is positively related to achievement and performance in school (e.g., see Marsh, Parker & Barnes, 1985). It is much less clear, however, to what degree ASC "causes" achievement versus being an outgrowth of it, or the degree to which the relationship is reciprocal. (A review of the complex research on this issue is beyond the scope of this paper). This question has enormous practical significance because the value of any counseling-type intervention aimed at strenghing ASC rests squarely on the degree to which ASC is a causal antecendent to school performance, if the goal is to boost achievement. Interstingly, most researchers place considerable emphasis on the ASC-achievement relationship in their critique of any particualr theoretical model. Although reasonable, this focus underemphasizes the possibility that one's view of their capabilities in any given area may be only minimally related to their desire to perform therein. It is, of course, possible to view improvement of ASC as an end in itself, even if such improvement doesn't translate into performance increases.

A fascinating line of theoretical research suggests that ASC is a strong frame-of-reference phenomenon (Bachman & O'Malley, 1986; Davis, 1966; Marsh, 1984). Dubbed the Big-Fish-Little-Pond Effect (BFLPE) by Marsh and Parker (1984), this idea holds that comparison of one's academic performance with that of one's immediate peers is a strong determinant of ASC. As such, although there is a strong, positive relationship between one's ability and ASC, there is also a significant, negative relationship between the average ability level of one's school and ASC. So, for two students of equal ability, the

BFLPE predicts a lower ASC for the student in the "better" school.

The BFLPE idea is rooted in the social psychology theoretical tradition of frame-of-reference effects (e.g., see Sherif & Sherif, 1969). In an early exploration, Davis (1966) found that attending a high-ability college did not have a strong effect on men's career aspirations. Davis posited that relative standing was the operative factor, but was unable to demonstrate this effect empirically. Using complex path-analytic procedures with various large samples of high school students, several researchers have recently confirmed the relationships predicted by the BFLPE (Bachman & O'Malley, 1986; Marsh, 1987; Marsh & Parker, 1984). The effect may be stronger at younger ages (Marsh, 1987). It is critically important to understand that the BFLPE does not run counter to the common-sense notion that higher-ability and/or higher-achieving students will have higher ASCs. What it does suggest is that for any given student (i.e., holding ability constant) inclusion in higher-ability scholastic environments will tend to produce lower academic self-concpets, possibly resulting in lower performance or aspirations. For example, in a series of creative experiments Strang, Smith and Rogers (1978) found evidence suggesting that the ASCs of mainstreamed educationally handicapped students is affected by whether the reference group is the special or regular class of which they are a part. ASC, and consequently the BFLPE, tends to be more strongly related to performance (e.g., grades) than to achievement as measured by standardized tests (Marsh, 1987).

The BFLPE has important implications, especially for school psychologists who so frequently must advise eduators and parents on children's program placements. In regard to handicapped or other low-achieving children, the BFLPE would suggest some strengthening of ASC by placement in a grouping of other low-achieving students, and, conversely, some negative effects of mainstreaming. Strang, Smith and Rogers (1978) found some evidence of such effects. The opposite effects would be predicted for high-ability students, i.e. homogeneous ability grouping would tend to lower ASC. Some research supports this prediction as well (Kulik & Kulik, 1982). BFLPE-based predictions, such as the above, must be viewed cautiously, however. Placements into programs have complex effects, especially when the programs carry a strong label or have the potential for making striking changes in academic performance.

The most interesting (and largely unresearched) BFLPE-based predictions concern the effects of school transitions, or involvement in highly selective programs. Every school psychologist has had to deal with the distraught child or parent who has just moved from one school to another and has experienced, first-hand, that

all schools are not alike. Since the child's ability remains largely unchanged, the BFLPE would suggest considerable changes in ASC accompanying a change in schools, if the average ability level of the child's old and new schools are substantially different. Negative changes, which are the ones that cause concern, would predictably follow changes such as moving from a rural to a suburban area, or transferring from a public to a private school. Though these predictions are largely unresearched, Shwarzer, Jerusalem, and Lange (1983) found such changes for a sample of West German high school students. Another provocative possibility is that the now-popular notion of placing children in highly selective academic preschools may have reverse effects than the ones desired. If the BFLPE is valid, starting off life as a little (or moderate) fish in a big pond may not the best way to foster a lifelong career of excellence. These areas of large transitions and inclusion in highly selective environments represent fertile areas for BFLPE-based research.

The last section of this paper briefly summarizes recent and on-going research on ASC at the University of Maryland. As one part of an on-going school system/university collaborative relationship (see Cohen, 1987 or Strein, 1988a), the Self-Concept As Learner Scale (SCAL) (Waetjen, 1967) was administered by a local school system during the 1984/85 school year to a sample of fifth graders in four of the system's elementary schools. Three University of Maryland studies (N's > 250) have used this data to investigate various aspects of ASC. Edelman (1988) analyzed the relatiionships between total SCAL scores and achievement tests and grades in reading and math separately for white and black students, while controlling for "ability" as measured by the IQ score on the California Achievement Test. Significant, but low, partial correlations (.16 - .23) were found between ASC and achievement or grades for whites, while the corresponding partial correlations (-.08; - .21) were nonsignificant for blacks. Interpretations of these differential correlations are confounded by large differences in sample sizes for whites (230) and blacks (53). However, the patterns of the partial correlations would suggest that while the relationship between ASC and math achievement was similar for blacks and whites, the relationship was weaker for blacks in regard to math grades, and grades and achievement in reading when considering equally able students.

Focusing on the effects of grade retention on ASC, Cain (1988) compared the SCAL scores of fifth grade students who had previously been retained in some grade with those who had never been retained. She also compared scores of students who had been retained in first grade with those retained in fourth and fifth grade. Not surprisingly, she found a small (187 vs. 180) but

statistically significant (p = .02) difference in total SCAL scores favoring the never-retained group. However, when ability was controlled for through the use of analysis of covariance, the differences disappeared. Additionally, there were no significant differences based on the grade at which retention occurred. Based on all of these results, Cain concluded that the differences in ASC observed in this study could not be attributed to retention.

In a study that explored relationships between demographic variables and ASC, Schwalb (in progress) did not find any significant relationship between gender, family SES or family birth order and SCAL scores. Controlling for achievement did not affect these results. While the literature variously supports a relationship between these demographic variables and <u>general</u> self-concept (or self-esteem), little research exists relating these factors to <u>ASC</u>. The Edelman, Cain and Schwalb studies share the common strength of using a field-based sample that comprised a substantial proportion of the entire fifth grade population of an intact school system. Additionally, the demographic data in the Schwalb study are often difficult to obtain. These strengths are, however, offset by insufficient evidence supporting the validity of the SCAL. Although both Lunenburg (1983) and McQuilkin (1980) provide some modest support for the SCAL, and although the SCAL has been used in numerous unpublished theses and dissertations, little hard evidence on the validity of the SCAL exists apart from the test author's (Waetjen,1967) own unpublished work. Considering this unknown limitation, the results of the three studies reviewed above should be regarded as exploratory rather than confirmatory or definitive.

Research in progress by the presenter aims to explore the Big-Fish-Little-Pond Effect as it pertains to the transition from high school to college, and subsequent college matriculation. Using two published measures of ASC, data have been collected on 80 first-semester college freshmen, along with information on high school GPA, mean high school ability level, SAT scores and subsequent first-term college GPA. Similar data will be collected on a sample of college seniors and a follow-up of the freshmen sample at the completion of their second semester. The central working hypothesis of this research is that students will shift their frame of reference from their high school to their college environment. If so, there should be a stronger relationship between mean high school ability and ASC for the first-term freshmen than for the seniors, or for the freshmen observed at a later time. Further, there should be a detectable shift in ASC depending on the type of high school attended, i.e. freshmen from highly competitive high schools might experience an increase in ASC as they complete their

freshman year, whereas students from more modest academic backgrounds might experience the reverse effect.

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Notes

1. A computerized PsychLit search from 1983 to October 1988 search using "Rosenberg Self Esteem Scale" as the search term produced 128 entries. A scan of the abstracts suggested that at least 75 percent of these published articles used this scale as the sole measure of self-concept.

2. The presenter gratefully acknowledges the assistance given by Dr. James Murphy, School Psychology Program coordinator, Rider College, and Mr. Jonas Taub, President, New Hampshire Association of School Psychologists, who reviewed this paper prior to its presentation.